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ABSTRACT

Kentucky's PACE program, which was designed to provide adult basic education and parenting skills training for parents, early childhood education for children, and parent-child interaction and learning, lacks proof for the validity of its theoretical base and service model. Questions that need to be resolved before widespread replication of the PACE program occurs include the following: (1) Is there a causal relationship between family background and children's educational and social outcomes? (2) Will changes in family attitudes and behaviors change children's outcomes? (3) Can replication of the program in different settings by different providers reproduce original effects? Program review produced a statement of the theoretical model implied by the program's assumptions. The model consisted of hypotheses about family background, children's outcomes, and PACE services. Drawing from the literature on family background and child learning, an explanatory model includes hypotheses about the causes of undereducation. A prevention and remediation model includes hypotheses about the effect of PACE services on the amelioration of literacy problems related to family factors. The present paper presents these hypotheses along with ideas about how they might be tested. Concluding material offers a strategy for evaluating the program. (RH)

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RESEARCH NECESSARY TO VALIDATION OF THE PACE MODEL

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The PACE program was the result of the perception by legislators and education professionals that Kentucky's relatively poor standing in relation to other states is the result of identifiable and remediable cultural factors. Specifically, it was asserted that the limited educational attainment of a large proportion of the state's rural population is due to an "intergenerational cycle of undereducation" (Heberle, 1988, 1989; Weiss, 1989). This amounts to a theory about the intergenerational transmission of educational performance.

The PACE program was designed and implemented by the Kentucky Department of Education's Division of Adult and Community Education as an effort to remediate the presumed causes of undereducation. Since the theory presupposes that the problem to be addressed is the intergenerational transmission of attitudes and behaviors, services are intended to address parents' attitudes and behaviors and their effect on children's educational performance. Program services include adult basic education and parenting skills training for parents, early childhood education for children, and joint parent-child interaction and learning (Heberle, 1988).

An extensive literature documents relationships among family educational history, family attitudes about education, childrearing practices, and the expected educational and social outcomes of children whose parents are poorly educated (Hibpshman, 1989). PACE program design was based on the presumption that these family factors are the cause of children's outcomes. PACE also selected a particular model of early childhood education based on an extensive literature on the effectiveness of this type of service.

The PACE program is appealing because it responds to known problems on the basis of known relationships with services of known efficacy. The program has in fact won an award for its innovative approach, and has been replicated by an outside funding agency. Despite this appeal however, neither the theoretical basis for the program nor the efficacy of its service model have been proven.

There are two problems that need to be addressed. First, the studies in the literature on family factors demonstrate correlational relationships but do not give conclusive proof that family factors cause children's outcomes (Hayes, 1989). Because the presumed causality has not been demonstrated there is no compelling reason to expect that program services, even if effective in changing the family

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factors, will result in the desired outcomes. Acceptance of the PACE service model as having a priori validity requires that these causal relationships be demonstrated.

The second problem relates to the distinction between what occurs in theory and what can be accomplished in practice. An excellent service-delivery model can demonstrate its effectiveness on a small scale with highly motivated staff, but the replication of similarly strong effects on a larger scale where program control is diffused across multiple service organizations is another matter altogether (Haskins, 1989).

Social and educational programs are often proposed and implemented based on common-sense beliefs about the causes of social problems, and these programs generally employ attractive service-delivery models. In education this sometimes results in what Robert E. Slavin has described as a "pendulum" effect where the program is implemented and rapidly expands amid high hopes for its efficacy, until disillusionment arises as evaluation studies fail to confirm the program's assumptions (Slavin, 1989).

There are thus outstanding issues about the PACE program that need to be resolved before widespread replication is justified. These issues can be stated as follows:

1. Is there a causal relationship between family background and children's educational and social outcomes?

2. Regardless of the causality involved, will changes in family attitudes and behaviors be effective in changing children's outcomes?

3. Even if services that change family factors can be shown to cause changes in children's outcomes, can replication of the PACE program in different environments by different providers result in the same effects?

At the request of the Division of Community Education, a review of the PACE program was begun in January 1989. This review among other things developed a statement of the theoretical model implied by the program's assumptions. This model consists of a series of hypotheses about family background, children's outcomes, and PACE services, divided into two parts. The first part, the "Explanatory Model", includes hypotheses about the causes of undereducation drawn from the literature on family background and child learning. The second part, the "Prevention/Remediation Model", includes hypotheses about the effect of PACE services on the amelioration of literacy problems related to family factors.

The present paper presents these hypotheses and some ideas about how they might be tested.

The Explanatory Model

1. Individuals whose parents have negative attitudes and expectations about education are more likely to perform poorly in school than individuals whose parents do not have these negative attitudes.

The general idea with this hypothesis is that a) some parents view education in a negative light; b) they communicate this viewpoint in some (not necessarily explicit) fashion to their children; c) as a result, the children adopt similar attitudes about the importance of schooling and/or fail to develop skills/behaviors necessary to good school performance; and d) this results somehow in less chance of success on measures of educational outcome such as graduation from high school, academic learning, etc.

From the above it is clear that a test of this hypothesis must demonstrate the following:

a) One or more mechanisms whereby parents transmit their attitudes about education to their children

b) That parental attitudes about education precede and are related to children's attitudes about education and/or educationally-related skills/behaviors when socioeconomic status and other non-education-related family factors are controlled

c) That children's attitudes and behaviors related to education:

   1) Are relatively enduring over the school lifetime of the child

   2) Are related to school performance

2. Children whose parents present poor educational role models are more likely to perform poorly in school than children who have good parental role models.

This amounts to an hypothesis about the transmission of parental attitudes to children, i.e., an element under 1.a). It presupposes that a) parental nonverbal behaviors relating to education can be identified; b) these behaviors can have an effect on children's attitudes and behaviors; c) the children's attitudes/behaviors are related to their educational outcomes. Note that even though this

hypothesis represents a mechanism for transmission of parental attitudes about education, it is not necessary for parents to verbalize negative attitudes about education.

A test of this hypothesis requires the following:

a) Identification of parental behaviors that model attitudes about education

b) A demonstration of an effect of these behaviors on children's educationally-related attitudes and behaviors

3. Some parental styles are more likely to produce children who perform poorly in school than are others.

PACE staff belive that in addition to parental attitudes and behaviors related to education there is a relationship between child-rearing practices generally and children's educational outcomes. A test of this hypothesis requires:

a) Identification and measurement of parental styles

b) Demonstration that the styles are related to children's educational outcomes and that:

1) The parental style preceded the child's educational performance

2) The relationship exists when socioeconomic and other irrelevant factors have been controlled

4. Children whose parents present poor educational role models will have deficiencies in learning skills in the preschool years related to later deficiencies in educational and social performance.

PACE's provision of early childhood services implies that deficiencies caused by family factors should be identifiable at age 3 or 4. This requires a demonstration that children whose parents have negative attitudes about education and/or present poor educational role models and/or have parenting styles related to children's school failure, have deficiencies at age 3 and 4 that are related to later deficiencies in educational and social performance.

5. Positive changes in parental basic skills will improve children's school performance.

The PACE program includes an adult basic education component because of the belief that undereducation is a family phenomenon. This is derived from H2, because parental undereducation is seen as role-modeling of devaluation of education. Even if limited parental basic skills influence children's educational outcomes, there is no guarantee that remediation of the parental undereducation will result in better performance by the child. It is necessary then to test whether improvement in parental basic skills will result in improvement in children's educational outcomes. Test of this hypothesis requires demonstration of the following:

a) Improvement in children's educational outcomes related to and following improvement in parental basic skills

b) Improvement in children's educational outcomes incrementally related to the amount of parental basic skills improvement

6. Parental modeling of positive attitudes and behaviors about education will improve children's school performance.

As with H5 it is possible that demonstration of a causal relationship between parental attitudes and behaviors would not guarantee that improvements in children's performance would follow from successful treatment. Since this is an essential element of PACE theory, it is necessary to demonstrate this relationship. Support for this hypothesis requires:

a) Evidence that parental attitudes and behaviors can be improved through participation in the program.

b) Evidence of an incremental relationship between the amount of change in parental attitudes/behaviors and children's outcomes

7. Positive changes in parenting skills will improve children's school performance.

This is similar conceptually to H5 and H6. It requires demonstration of the following:

a) That program services are effective in changing parenting skills

b) That there is an incremental relationship between improvement in parenting skills and children's educational outcomes

8. Improvements in preschool learning skills will improve children's school performance.

As noted above the efficacy of early childhood intervention has been established by such programs as the Perry Preschool and Early Training projects (Achenbach, 1978; Barnett, 1985; Hoegl, 1985). Application of these services as a part of a much broader program with a different population at many sites under the sponsorship of a state educational beaurocracy adds numerous factors that could affect the outcome. For this reason it is necessary to test whether improvements in preschool learning skills in the PACE program result in the same type of improvement in later school and social functioning as was seen in these other programs. This requires that the following be demonstrated:

a) That children's preschool learning skills increase during the course of program participation

b) That there is an incremental relationship between learning skill improvement and eventual educational and social performance of the children, not due to other factors also affected by the program

9. Services delivered during a critical preschool time period will have a significant long-term effect on children's school performance.

Services are delivered by the PACE program only to children aged 3 and 4 and their parents. This is as much a matter of inertia in the educational system as anything else (i.e., the public schooling process traditionally begins when children are five or six years old, and priority is given to the traditional school process once children age into it). This is no guarantee that services similar to PACE would not have desirable effects for children in other age groups. There is some evidence that family factors are related to children's outcmes well into the schooling process (Alwin & Thornton, 1984). This is particularly important given the PACE assumptions about the causal importance of family factors. This hypothesis is essential only to the extent that PACE services continue to be limited to preschool children and their families.

10. A combination of services provided simultaneously to parents and children will be more effective than presentation of the same services by different providers on different occasions.

This hypothesis is essential to PACE theory. Each of the components of the PACE program is known to have some utility for the population it addresses. An essential feature of PACE is its assumption that a combination of traditional services in the adult education and early childhood service areas will produce an effect that the services could not separately produce. PACE attempts to change the effect of family patterns of undereducation by providing services to both parents and children. This requires the demonstration of an interaction effect among program services beyond the effects of specific services.

Current and planned evaluation efforts

The PACE program introduced the following factors which might have caused a program effect:

1. the nonspecific effect of attention from helping persons
2. the effect of Adult Basic Education instruction
3. the nonspecific effect of child care
4. the general effect of early childhood education
5. the effect of the High/Scope materials
6. the effect of training in parenting skills
7. the effect of providing transportation
8. the effect of recruitment and selection
9. the effect of simultaneous services to parents and children
10. the effect of teaching and management strategies at specific program sites
11. interaction effects among all of the above.

PACE's elaborate -- if sometimes implicit -- model predicts that certain remedial and preventive services will result in improvement in the educational and social outcomes of disadvantaged children. This model is based on a literature that shows relationships between certain family patterns and outcomes. PACE theory is based on the

assumption that the relationships exist because family patterns are the cause of the outcomes and provides services in an attempt to change the outcomes by changing the family patterns.

After consideration of the various hypotheses that need to be tested in order to evaluate the PACE model, the current evaluation of the program developed the following strategy:

A. Use a nonequivalent control group design to test the main effect -- i.e., whether the PACE model in general improves the educational performance of disadvantaged children and whether it gets results equal or superior to other programs available to its clientele. Estimate cost-benefit and cost-efficiency on the basis of this study.

B. Use smaller studies to test the simple effects of some of the components of the program, such as child care and transportation.

Prior to the current effort at program evaluation there were three attempts to evaluate the program (Kim 1987, 1989; Townley, 1987). These efforts failed to adequately describe the program's performance because of methodological problems inherent in the designs of the three studies. Current PACE research grew out of the critique of these studies.

Major flaws of these efforts included the lack of comparison group or baserate data and confusion by the researchers about the intent of the PACE program (Hibpshman, 1989). The above hypotheses were developed primarily for the purpose of clarifying PACE evaluation issues so that better studies could be conducted. Planning for these improved studies, including tests of the prevention/remediation model, is currently underway. These studies are expected to begin in the next few months.

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